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**United States Patent** [19][11] **Patent Number:** **5,252,090****Giurtino et al.**[45] **Date of Patent:** **Oct. 12, 1993****[54] SELF-LOCKING IMPLANTABLE  
STIMULATING LEAD CONNECTOR****[75] Inventors:** Joel F. Giurtino, Engelwood; Ian A. Adamson, Denver, both of Colo.**[73] Assignee:** Teletronics Pacing Systems, Inc., Englewood, Colo.**[21] Appl. No.:** 954,122**[22] Filed:** Sep. 30, 1992**[51] Int. Cl.<sup>5</sup>** ..... H01R 4/24**[52] U.S. Cl.** ..... 439/441; 607/9**[58] Field of Search** ..... 439/436-441**[56] References Cited****U.S. PATENT DOCUMENTS**

4,848,346	7/1989	Crawford	128/419 P
4,942,876	7/1990	Gotthardt	128/419 P
4,995,389	2/1991	Harris	128/419 P
5,069,209	12/1991	Posin	128/419 P

**OTHER PUBLICATIONS**

Calfee et al., "A Voluntary Standard for 3.2 mm Unipolar and Bipolar Pacemaker Leads and Connectors", Pace, vol. 9, pp. 1181-1185, Nov.-Dec. 1986, Part II.

International Standard IS-1, International Organization for Standardization document ISO/DIS 5841-3, 1989.

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**[57] ABSTRACT**

A connector assembly for an implantable stimulating device employs a lead-locking spring clip to reliably provide a mechanical and electrical connection between the terminal pin of an electrode lead and the device, while reducing the user interaction required during implantation and disconnection. No tools are required to establish the connection. No user action, other than inserting the lead into the connector, is necessary to lock the lead into place. Disconnecting the lead requires only the application of a modest transverse compressing force to a release button on the connector assembly. In the event that a withdrawal force is applied to the lead without simultaneously applying the compressing force to the release button, the connector assembly increases its holding force on the electrode lead.

**32 Claims, 7 Drawing Sheets**